



*International Civil Aviation Organization*

**Fifteenth Meeting of the APANPIRG ATM/AIS/SAR Sub-Group  
(ATM/AIS/SAR/SG/15)**

Bangkok, Thailand, 25 – 29 July 2005

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**Agenda Item 3: Review and progress the tasks assigned to the ATM/AIS/SAR/SG by  
APANPIRG**

**IMPLEMENTATION OF 30/30 SEPARATION STANDARDS IN OCEANIC AIRSPACE**

(Presented by the Secretariat)

**SUMMARY**

This paper based on information provided by Australia describes the implementation of 30 NM lateral and 30 NM longitudinal Separation Standards (based on RNP 4) in the South Pacific Oceanic areas on 20 January 2005.

**1. INTRODUCTION**

1.1 In February 2004, the 18<sup>th</sup> meeting of the Informal South Pacific ATS Coordination Group (ISPACG) established the 30/30 Working Group to plan for the implementation of 30/30 reduced separation standards (based on RNP 4) across the Tasman and Coral seas (South Pacific). The target date was set for 25 November 2004.

1.2 The Working Group continued its work through 2004, developing an implementation plan and Safety Assessment. On 20 June 2004, the ICAO President on behalf of the Council authorised the use of the 30 NM lateral/30 NM longitudinal Separation Standard in the relevant FIRs as specified in the ICAO Regional Supplementary Procedures (Doc 7030, MID/ASIA/PAC/RAC). Implementation was delayed by two months, due to a requirement by Airservices Australia to fully review the Safety Assessment and the Target Level of Safety (TLS) calculations prior to implementation.

1.3 On 20 January 2005, following satisfactory completion of the safety review, 30/30 NM separation (based on RNP 4) was introduced across the Honiara FIR (Solomon Islands); Nauru FIR (Republic of Nauru); and the Tasman Sea area, which includes portions of the Brisbane FIR (Australia); Nadi FIR (Fiji); and Auckland FIR (New Zealand).

**2. DISCUSSION**

2.1 The ICAO Separation and Safety Panel [SASP] completed an evaluation of the reduction in lateral and longitudinal separation standards based upon the introduction of new Communication, Surveillance and Navigation (CNS) technologies. The advent of Direct Controller Pilot Communications (DCPC) via Controller Pilot Data Link Communication [CPDLC] in the Oceanic airspace, the development of Automatic Dependent Surveillance Contract [ADS-C] capabilities and high integrity RNAV provided the window of opportunity for ICAO to approve the

reduction in lateral and longitudinal separation to 30 NM laterally and 30 NM longitudinally under strict conditions.

2.2 The 30 NM lateral/30 NM longitudinal OCA RNAV separation standard requires both aircraft to have RNP 4 Operational Approval as per ICAO Doc 9613 Appendix F; to be within designated RNP airspace; and distance reports must be obtained at least every 14 minutes. In addition, the 30/30 standards require surveillance by the use of ADS-C and communication by CPDLC or VHF for DCPC.

2.3 The following table summarises the requirements of 30/30 NM separation and makes a comparison with the requirements for 50/50 NM separation.

Comparison Table of Separation Standards in Oceanic Class A.

	Separation Standard 30NM/30NM	Separation Standard 50NM/50NM
<b>Communications</b>	DCPC [CPDLC]	VHF or CPDLC or HF
<b>Navigation</b>	Both aircraft RNP 4	Both aircraft either RNP 4 or RNP 10
<b>Surveillance</b>	ADS-C reporting at least every 14 min	Position report at least every 30 min

Notes:

- a) The application of the 30 NM lateral/30 NM longitudinal separation standard requires that aircraft must flight plan in a specific manner to be eligible for this standard.
- b) The flight plans must indicate:
  1. “J” (Data Link), “R” (RNP) and “Z” (Nav) in item 10 , Equipment;
  2. “D” (ADS) in Item 10, Surveillance Equipment; and
  3. NAV/RNP4 in Item 18.

Planning and implementation activities undertaken by the ISPACG 30/30 Working Group

2.4 The major activities undertaken by the ISPACG 30/30 Working Group for the implementation of the 30 NM lateral/30 NM longitudinal RNAV separation standards were:

- Creation of the Implementation working group task list
- Conducted Safety Assessment (Hazard Identification workshop)
- Determination of Airborne and Ground system Requirements
- Conducted Rulemaking
- Performed Industry, Defence and Internal coordination
- Conducted International coordination
- Developed Pilot procedures
- Conducted Training Needs Analysis
- Performed Initial System Verification
- Conducted system verification of navigation deviation incidents and events
- Conducted Target Level of Safety calculations for the airspace

- Established a monitoring procedure of post implementation System Performance
  - AGDP (Brisbane TAAATS)
  - OCS (Auckland Oceanic)
  - SITA (Datalink Service Provider)
- Conducted investigation of delayed ADS-C reports
- Established an ongoing monitoring program for navigation deviations
- Established an ongoing monthly reporting of all data link communication delays

2.5 The outcome of these activities ensured that there was a safe implementation of the ICAO Doc 7030 MID/ASIA/PAC 30 NM lateral/30 NM longitudinal RNAV separation standard in the Tasman and South Pacific.

#### Safety Assessment and Conclusions

2.6 The ISPACG 30/30 Implementation Working Group Safety Assessment reported that *“the frequencies of observed or estimated separations between successive aircraft at the same level have been calculated and no more than 4% of separations fall into any one 10 NM band from the minimum separation of 30 NM to a separation of 280 NM. [[Appendix 16 ICAO Doc 7030 Para 6.2.2.5](#)]”*.

2.7 Further, the Safety Assessment also recorded that *“The TLS for 30 NM/30 NM has been recalculated based upon Australian and New Zealand data and has produced respective TLS of  $2.38 \times 10^{-9a}$  and  $2.39 \times 10^{-9a}$ , these exceed the ICAO TLS requirement of  $5 \times 10^{-9}$ . [[Appendix 19 Australian TLS Calculations](#) and [Appendix 20 NZ TLS Calculations](#)]”*.

2.8 The ISPACG 30/30 Implementation Working Group Safety Assessment concluded that *“The 30NM/30NM Implementation Project followed the Airservices Australia Safety Management System in [AA-NOS-SAF-0002](#), met the requirements of ICAO Doc 7030, followed the recommendations of ICAO PANS-ATM Doc 4444 and documented all activities in the ISPACG 30/30 Working Group Safety Assessment Report. The outcome of the Safety Assessment is that Airservices Australia, Airways New Zealand, and Airports Fiji can safely implement and operate the ICAO 30 NM lateral/30 NM longitudinal separation standard within specified Oceanic airspace.*

2.9 The ICAO Asia and Pacific Regional Office has been provided with an electronic copy of the ISPACG 30/30 Implementation Working Group Safety Assessment, as prepared by Australia, Fiji and New Zealand.

#### Benefits of 30/30 reduced Separation Standards (based on RNP4)

2.10 30/30 Separation Standards enables suitably equipped and approved aircraft to operate in closer proximity to each other to effectively utilise the airspace in a more effective manner. Aircraft will be able to obtain optimal flight paths and cruising levels leading to operational, economic and environmental benefits.

2.11 In addition to enhanced operating efficiencies, another benefit of the implementation of 30/30 in the South Pacific is that States and Organisations may wish to refer to the 30/30 implementation activities undertaken by Australia, Fiji and New Zealand, to facilitate their planning and implementation of 30/30 in other Oceanic airspace areas.

**3. ACTION BY THE MEETING**

3.1 The meeting is invited to:

- a) note the planning and implementation activities that have been undertaken in relation to the introduction of 30/30 reduced separation standards (based on RNP 4) in the Coral and Tasman seas;
- b) States, in planning for 30/30 implementation, should take in to account the methodology and implementation planning processes developed by ISPACG especially in regard to the safety management practices adopted; and
- c) identify areas in the Asia/Pacific region where 30/30 could be implemented and consider a timeframe for implementation.

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